

SUMMER 2020

# THE GROWER

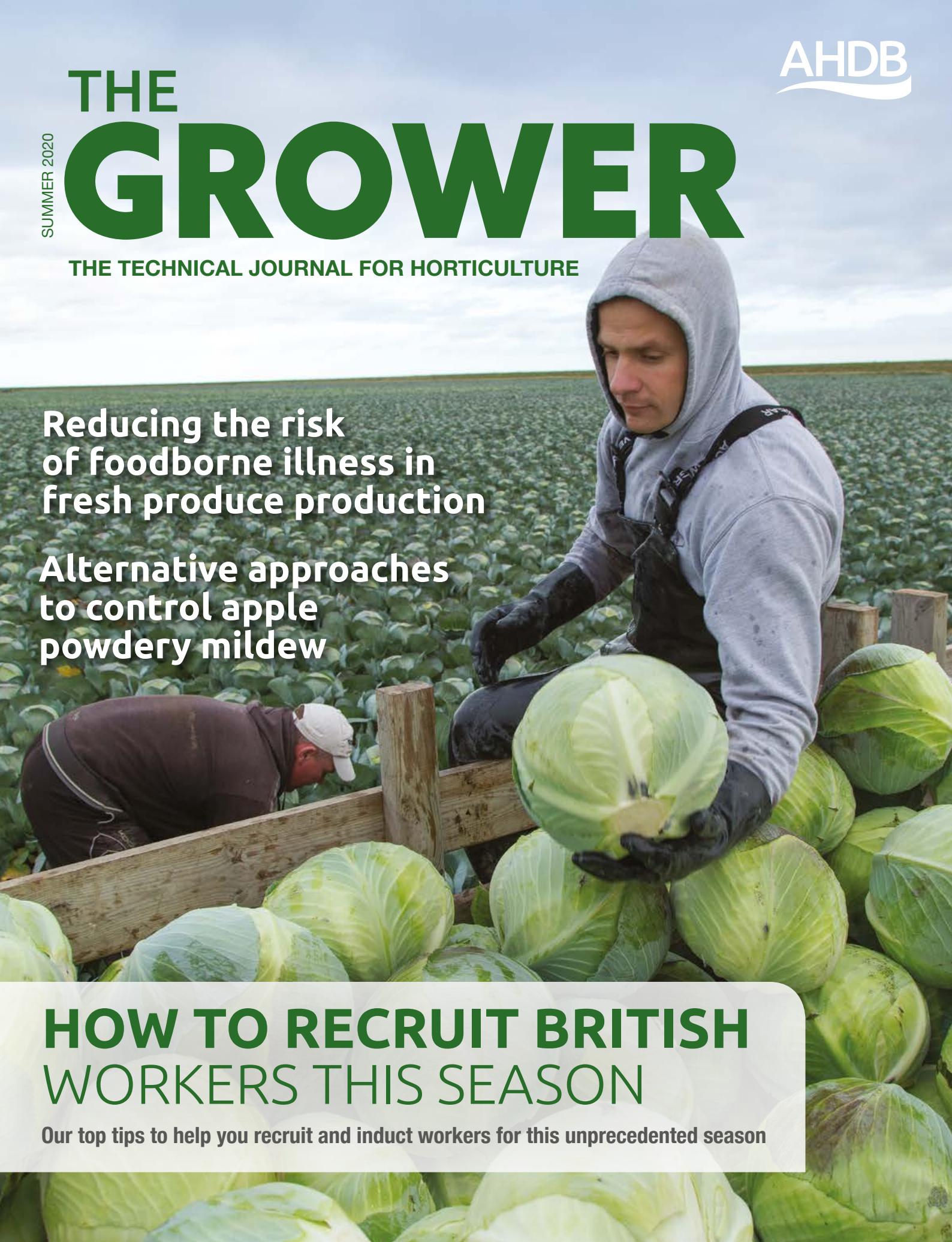
THE TECHNICAL JOURNAL FOR HORTICULTURE

**Reducing the risk of foodborne illness in fresh produce production**

**Alternative approaches to control apple powdery mildew**

**HOW TO RECRUIT BRITISH WORKERS THIS SEASON**

Our top tips to help you recruit and induct workers for this unprecedented season



# **CORONAVIRUS:** **Advice for farmers and growers**

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# COMMENT



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The food and farming industry never pulls together better than in a crisis. But, like you, I've never experienced anything in my career on this epic scale.

We're all having to find new ways of working. Never has this sector's ability to adapt and innovate been tested to such extremes. Growers have, typically, responded swiftly and shown great resilience in coping with the changes – from modifications to field and packhouse operations to fluctuations in market demand. Even so, some businesses – the ornamental sector especially – have been absolutely hammered by the restrictions imposed to tackle coronavirus.

In this time of crisis, AHDB, Defra, the NFU and other sector bodies are rallying to ensure that every mechanism at government's disposal is deployed to ease the strain. AHDB is feeding in evidence and information to support lobbying efforts and help guide decisions.

As you'd expect, all AHDB face-to-face events have been cancelled through to Tuesday 30 June. We're meeting weekly to review the situation and exploring alternative routes to deliver content to farmers, growers and processors.

Several growers contacted me with concerns over the levy payment itself. We are able to support growers experiencing financial difficulty and have communicated our approach to this to all of our levy payers. We have also launched a dedicated coronavirus web page. It's being constantly refreshed with podcasts and guidance for farmers and growers.

I'm excited by the new appointments we have made to the Board. Top of our agenda is responding to the feedback and recommendations from Defra's Request for Views report, and announcing a new way of working with you all – our customers. Our focus is to ensure the levy is being invested in the best way possible to help our growers thrive through the challenging times ahead.

This event will cast a long shadow, but AHDB will be shoulder to shoulder with growers when we emerge on the other side.

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# NEWS & UPDATES

## IN BRIEF

### PEST AND DISEASE IDENTIFICATION GUIDES

Our updated Crop Walkers' Guides will help you easily identify pests and diseases for protected edibles, mushrooms and alliums. Also, there's a new poster to help you identify different thrips species. Find them at [ahdb.org.uk/knowledge-library](http://ahdb.org.uk/knowledge-library) or order from [publications@ahdb.org.uk](mailto:publications@ahdb.org.uk)

### XYLELLA FASTIDIOSA RESTRICTIONS

The Government has introduced further measures to help prevent the introduction of *Xylella fastidiosa*, including a ban on importing *Coffea* and *Polygala myrtifolia*. Stronger import requirements will also be in place for high-risk hosts, including olive, lavender and rosemary.

### PLANT SELLERS CONNECTED TO LOCAL BUYERS

In response to the closure of garden centres due to coronavirus, HTA launched its Plants Near Me scheme to connect ornamentals plant suppliers with local customers. Make sure your business is registered at [plantsnearme.hta.org.uk](http://plantsnearme.hta.org.uk)

### PEST BULLETIN ALERTS

Our pest monitoring service resumed in April. This year, there will be an increased focus on bean seed fly and swede midge, as well as information on cabbage root fly, carrot fly, diamondback moth and silver Y moth. Find out more and sign up to the weekly alerts at [ahdb.org.uk/knowledge-library/ahdb-pest-bulletin](http://ahdb.org.uk/knowledge-library/ahdb-pest-bulletin)

## NEW HORTICULTURE SECTOR board members

**Five new members have been appointed to the AHDB horticulture sector board. They began their three-year term in April.**

The new sector board members bring a wealth of horticultural experience from different sectors, including ornamentals, vegetables and fruit. Your new board members are:

- Keston Williams – Director at Barfoots of Botley Ltd. (field produce)
- Peter Judge – Managing Director, S&A Produce (strawberry)
- Mark Eves – Director, PS & JE Ward Ltd. (bulbs and outdoor flowers)
- Jamie Dewhurst – Managing Director, J&A Growers (hardy nursery plants)
- Michael Barker – former editor of Fresh Produce Journal (independent board member)

They will have responsibility for overseeing the horticulture sector strategy and ensuring that the levy raised has been spent to the benefit of the sector.

The government has also appointed Nicholas Saphir as the new Chair of AHDB. Nicholas has a wide background in agriculture and horticulture, having built a public company, farming, processing and trading fruit and vegetables in the UK, Europe, southern Africa and South America.

## DEFRA'S REQUEST FOR VIEWS report published

**The Government has published its response to the Defra request for views, regarding AHDB.**

Jane King, CEO of AHDB, welcomed the report: "The AHDB team is heartened by the industry's general endorsement for the continuation of the levy, once again proving we have a vital role to play in supporting farmers, growers and

processors in a rapidly changing world. I believe the role of AHDB has never been more important."

The official consultation outcome can be read at: [gov.uk/government/consultations/agriculture-and-horticulture-development-board-ahdb-request-for-views](http://gov.uk/government/consultations/agriculture-and-horticulture-development-board-ahdb-request-for-views)

## EVENT alert

In light of the coronavirus pandemic, AHDB has suspended all scheduled events in 2020. However, our teams are working hard to bring you fresh new content and updates through our webinar and podcast programme!

Visit [ahdb.org.uk/events](http://ahdb.org.uk/events) and [ahdb.org.uk/podcast](http://ahdb.org.uk/podcast) to watch and listen to the latest in horticulture.

# NEWS & UPDATES cont'd

## RESPONDING TO THE CORONAVIRUS PANDEMIC

The impact of coronavirus has been felt across the horticulture industry and we are obviously facing a season like no other this year.

We have been working closely with Defra, NFU, British Growers, HTA and other industry organisations to mobilise our resources to help support your business through these unprecedented times.

In April, we supported the HTA's survey to measure the impact the virus has had on the ornamentals sector. The results – due to be published soon – will allow government to fully assess the situation and understand what assistance may be needed.

For those looking to recruit workers from the UK, in light of travel restrictions compounding the challenge of accessing seasonal workers, we have collated our resources to help with attracting the right workers and encouraging them to stay the distance.

We also supported Defra with the launch of the new hub [pickforbritain.org.uk](http://pickforbritain.org.uk), which is connecting interested British workers to vacancies across horticulture.

Health and safety is a priority in normal conditions, but we made available some practical guidance on keeping your workers safe during the pandemic. In addition, we interviewed several growers about the smart and resourceful steps they were making to keep their staff safe.

We'll be continuing to update and respond to the crisis as it changes throughout the season. You can get all the latest guidance, resources, listen to our podcasts and catch up on webinars on our dedicated web page [ahdb.org.uk/coronavirus](http://ahdb.org.uk/coronavirus)

Plus, read about the importance of induction processes, get our top tips for recruiting staff and see how G's have responded to the crisis from page 26.

## THE FUTURE OF APPROVALS OUTSIDE THE EUROPEAN UNION



**Bolette Palle Neve,**  
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### Bolette Palle Neve on the likely impact of plant protection authorisations when we leave the European Union at the end of the year.

As we all know, there are few new active ingredients coming through for the European market. In 2019 alone, only seven new active ingredients were approved. It is, therefore, crucial we attempt to keep the existing actives.

We can do this by using products responsibly and by making sure proper resistance management programmes are implemented. Unfortunately, this is getting more and more difficult to achieve, with fewer modes of action available to control various pests, weeds and diseases. In some crops, growers rely on one mode of action and, while this isn't sustainable, they have no choice.

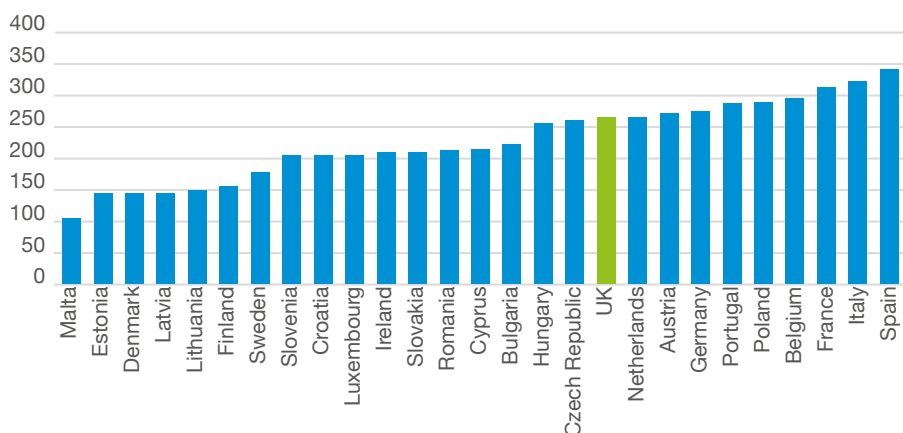
We will lose more active ingredients in 2020. A long list of actives are due to be renewed in Europe this year and we know that some of these are at risk, for example, bromoxynil and mancozeb. Some actives will see an extension to the expiry date due to delays in the process. This may help us in the UK as we could see the expiry date for all actives extended by three years when they are brought across into UK legislation, following the transition period from the European Union at the end of the year.

On a positive note, we have seen the number of available biological products increase in the past few years, with more biological products gaining approval

compared to conventional products. However, growers should be aware that only registered products can be used for plant protection purposes. Always check that the product has a MAPP number. This confirms that the product has been through the regulatory system and is authorised. If in doubt, please get in touch.

Below is a graph showing the number of active ingredients currently available in each European country. It will be interesting to look back at this graph in 5-10 years to see in which direction the UK has moved in terms of authorisations after we have left the European Union, following the transition period.

Available active ingredients in European countries



To discover all of the latest EAMUs visit [horticulture.ahdb.org.uk/latest-eamus](https://horticulture.ahdb.org.uk/latest-eamus)

# MITIGATING mildew risk

**Powdery mildew in apple reduces yield and fruit quality. Control in orchards has been poor, mainly due to a lack of effective fungicides. Angela Berrie, NIAB EMR, looks at the latest research into alternative approaches to control.**

Most UK apple varieties are susceptible to powdery mildew (*Podosphaera leucotricha*), particularly Braeburn, Gala and Cox. The disease overwinters as mycelium in fruit or vegetative buds, which emerge as mildewed blossoms or shoot tips in spring – primary mildew. Spores from the primary mildew spread to developing shoots to initiate the secondary mildew epidemic. Mildew colonises fruit buds in June/July and vegetative buds at the end of shoot growth in late summer, where it remains dormant until the following spring.

Under favourable humid conditions above 18°C, the fungus can infect leaves and produce sporing colonies in four to five days. Control strategies depend on maintaining primary mildew at a low level. Season-long protection is essential, which can amount to 10–15 fungicide sprays.

## Diagnosis and testing

Control of powdery mildew in commercial orchards previously depended on certain fungicide groups such as triazoles, which were used intensively, resulting in reduced sensitivity of mildew isolates to these products.

Products from different fungicide groups are now available, but are limited to 1–3 applications per season. AHDB project TF223 assessed ways of improving tree health, along with the tree's ability to withstand fungal infection. This was achieved using a range of substances within reduced fungicide control programmes, and these were compared to traditional routine fungicide programmes.

Various nutrients, substances reported to act as biostimulants that improved plant health and their ability to resist disease, and adjuvants that have a physical impact on mildew, were included to assess their incidental effect on powdery mildew. Such substances can't be used for control of powdery mildew, but the knowledge of incidental effects on mildew may help inform a managed programme, which could reduce fungicide use.

The use of a range of substances to improve tree health were evaluated in small-plot replicated trials at NIAB EMR on Gala apples, with and without fungicides. Promising incidental effects on mildew were seen, for:

- Cultigrow (a potential biostimulant based on flavonoids)
- Trident (a silicon-based nutrient)
- Mantrac Pro (manganese nutrient)

Products that physically controlled mildew included SB Invigorator (a blend of surfactants) and the adjuvant Wetcit (a natural adjuvant based on alcohol ethoxylate), which can be used in combination with plant protection products.

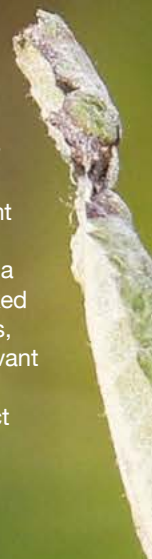
The incidental effect of these substances was evaluated in season-long programmes with reduced fungicide use and compared for mildew control with a 7-day fungicide programme.

In 2019, three different programmes were evaluated in a large plot trial (six rows of 70 trees) in an orchard at NIAB EMR, with alternating rows of Gala and Braeburn.

The programmes were evaluated from early blossom and applied by a tractor-trailed orchard sprayer at 200 L/ha. Two were based on Cultigrow, applied monthly, with either Mantrac or Trident applied every two weeks. The other was based on Trident and Mantrac alternating every two weeks. SB Invigorator was applied as a separate spray (this should not be mixed with other products) in all programmes, and Cultigrow was used with the adjuvant Wetcit. Fungicides were applied at 14-day intervals with the same product used as in the standard fungicide programme. Captan was included for scab control, when necessary.

Primary blossom mildew for both varieties was low but there was a high incidence of primary vegetative mildew on Braeburn. Secondary mildew on extension shoots was assessed every week from petal fall.

Secondary mildew on Braeburn was higher than on Gala, indicating higher susceptibility to mildew. Initially, the best control for both varieties was achieved by the standard fungicide programme. However, by July, all three trial programmes were performing as well as the standard programme, with secondary mildew around 5–10% mildewed leaves. The standard 7-day fungicide programme was effective in controlling the early mildew resulting from the high primary mildew on the Braeburn. Starting all three trial programmes with a 7-day fungicide programme for the first few sprays would probably have resulted in comparable control throughout the season but with reduced fungicide input. There was no phytotoxicity noted in the trial from the programmes applied.





## Results

The results show that there is potential for reducing fungicide inputs by improving the health of the tree and its ability to resist powdery mildew infection through the use of substances with biostimulant and physical properties.

As the biostimulant products boost plant resistance to disease, they act slowly and require frequent applications from an early stage of growth to be most effective. The products that increase the tree's physical ability to resist infection act more directly and could be used to

intervene if mildew incidence was increasing. In a commercial situation, the key to effective mildew control is regular monitoring of mildew incidence on shoots during crop inspections so appropriate decisions on product use can be made.

“ There is potential for reducing fungicide inputs by improving the health of the tree and its ability to resist powdery mildew infection through the use of substances with biostimulant and physical properties ”

**Project:** Improving integrated pest and disease management in Tree Fruit

**Project lead:** NIAB EMR

**AHDB contact:** Scott Raffle



# SEDUCING THE TROPICAL MIRID BUG IN TOMATO CROPS

A funding collaboration between AHDB and the Biotechnology and Biological Science Research Council (BBSRC) has already started to deliver promising results. Nikki Harrison, AHDB, reports on the breakthrough trap and lure system to control *Nesidiocoris tenuis* in tomato crops.

The tropical mirid bug, *N. tenuis*, is used as a biocontrol agent in protected crops, including tomatoes. Although *N. tenuis* preys on important insect pests, especially whitefly, it also causes damage by feeding on tomato plants.

This can particularly be seen when their prey populations decline. Their feeding causes necrotic rings on stems and leaf stalks, prevents flower development and creates punctures on fruits.

The bugs cause economic losses due to reductions in yield through feeding on and damaging the plants. It also requires additional resources to monitor and deal with this pest, including increased spraying. If populations develop, then a thorough clean-down is required to try to reduce pest numbers. This has meant that growers who rely on intercropping can no longer do so.

The pest is now established in some all-year-round tomato crops in Europe and is threatening the 180 hectares of tomatoes grown in the UK, at a cost to the industry estimated at £9.72m per year.

Control requires application of pesticides that are incompatible with integrated pest management programmes. This can lead to the resurgence of whitefly populations and associated viruses, and the disruption of other biocontrol systems, such as the use of predatory mites against spider mites.

The project team set out to identify the sex pheromone of *N. tenuis* and to then manufacture and field-test a synthetic pheromone to help pave the way for developing traps. These traps will improve the monitoring of pest numbers and make more efficient use of control agents. But they could also be

used to control the bug through either disrupting their mating or by mass trapping. This would reduce, or avoid completely, the use of conventional pesticides against this pest on protected tomato crops in the UK.

Two components of the female sex pheromone of *N. tenuis* have now been identified by the project, and traps baited with the synthetic pheromone have been shown to be highly attractive to male *N. tenuis* in commercial glasshouses. Traps and lures are now available for further evaluation by growers and researchers.

Dr Michelle Fountain, Deputy Head of Pest and Pathogen Ecology at NIAB EMR, said, “This could potentially be the most successful and rapid project I have worked on in recent years, which shows what can be achieved with a good level of funding.

“Not only have we identified and field-tested the sex pheromone, but have generated many ideas on how we might take this forward into real solutions for tomato growers.”

### About the AHDB-BBRSC funding partnership

The £250,000 partnership between AHDB and BBRSC has been developed to respond to high priority pests and diseases that present a significant threat to UK horticultural production. This pilot scheme has funded five projects of about £50,000 with a 3–5 month duration. The priority pests and diseases targeted for this pilot scheme were identified by AHDB, working closely with its industry-led horticulture sector panels and industry crop associations.

Dr Nikki Harrison, Head of Business Development at AHDB, said: “It is fantastic that this joint initiative is already delivering critical and tangible results for some of the biggest biological threats facing the industry. Through this new approach to funding, we have been able to address serious pest and disease issues, and commission high-impact research quickly and effectively.

“It is our intention to build upon this successful partnership approach and to develop further opportunities for co-funded research to support our growers and their businesses.”

The other four projects funded through this initiative include research to develop a new diagnostic test to identify an emerging pest threat in the UK, known as the Brown Marmorated Stink Bug. We’re also developing new and improved methods to isolate pheromones from horticultural thrips. In addition, there will be a project to examine whether a diagnostic test for Fusarium basal rot in bulb onions is effective prior to planting, as well as a project to develop a new resource in genomics to improve the understanding of downy mildew.

**Project code:** Identification of the sex pheromone of *Nesidiocoris tenuis*

**Project lead:** Michelle Fountain, NIAB EMR, David Hall, NRI, and Robert James, Thanet Earth.

**AHDB contact:** Nikki Harrison

“Not only have we identified and field-tested the sex pheromone, but have generated many ideas on how we might take this forward into real solutions for tomato growers”

# ARMOUR-PLATED: SCEPTREplus delivers new protection

AHDB research manager, Joe Martin, reports on another successful year for SCEPTREplus plant protection trials.



**Last year we ran 29 trials examining potential plant protection control options for pests, weeds and diseases and identified a number of potential promising solutions.**

**SCEPTREPLUS**

## Weeds

For cauliflower, two pre-plant products and three post-plant products gave useful control. These products are still coded and further work is being conducted to generate residue data for an EAMU application.

Emerger (aclonifen) gave useful control on alliums, particularly when it was applied post-emergence and we have now secured an EAMU.

Two coded products were good for controlling groundsel in baby leaf salad production. Another coded product was also useful, but crop safety was dependent on the growth stage and weather conditions.

Three post-planting products on celery, including aclonifen, gave 50% weed reduction. Some crop damage grew out after about three weeks.

Several trials have taken place on weed control in carrot. Last year, the trial focused on post-emergence control. Emerger and six coded products all showed promise. We have secured an EAMU for post-emergence use of Emerger and a further application is underway for another coded product.

In herbs, both Devrinol, Emerger and two coded products showed promise and we have since secured an EAMU for Emerger for pre-emergence use on parsley and dill. A further application is underway for other selected herbs.

Six promising products, including two pre-emergence and four post-emergence, were identified for sweetcorn.

For asparagus crops, four residual products looked useful in the post-harvest trial. One of the best inter-row treatments was Sencorex + Bucril, as well as a coded product would bring greater suppression of field bindweed.

Compared to the standard treatment of Kerb Flo + Stomp Aqua in Narcissus crops, three products significantly reduced the percentage of weed cover, including Wing-P tank mixes.

Every treatment trialled for blackcurrant significantly lowered weed cover and three products showed real promise for the future.

## Pests

Several conventional and bioprotectant products were shown to be effective on aphids. We are now producing information on the effectiveness and persistence of products against a number of aphid species. This will provide information on the effect of insecticides against non-target species.

Capsid numbers in strawberry were significantly reduced by three products, including Teppeki.

A review into tomato russet mite control identified a number of conventional and bioprotectant products that we will test in future trials.

A coded product could provide sufficient control of *Tuta absoluta* larvae in tomato crops if applied immediately upon sight of fresh mines.

## Diseases

In salad onions, three products demonstrated excellent activity against downy mildew. All seven foliar applied conventional products gave good control of celery septoria, and an EAMU for Nativo 75WG was secured.

For leek rust control, eight products performed well under robust disease pressure.

Damping off, caused by Pythium in baby leaf spinach, was reduced by all products in the trial. Three novel products performed close to the standard, Previcur Energy.

We have already secured EAMUs for 'Prolectus' (fenpyrazamine) and 'Frupica SC' (mepanipyrim) to help control fungal diseases in ornamentals, following successful trials.

A bioprotectant coded product significantly reduced white mould and smoulder in narcissus crops.

To help with a new tomato blight strain, a coded product significantly reduced the size of the stem lesion compared to the untreated crop and the industry standard, Ranman Top.

Powdery mildew was effectively controlled by three conventional products and a bioprotectant.

A conventional product performed exceptionally well throughout the entire season at controlling plum rust, significantly better than the control and current fungicide standard. A bioprotectant control also performed well.

Populations of bacterial canker were significantly reduced by two treatments. Assessments to look at canker in new shoots are planned this year, to see the effect of residual chemicals and to check plant defences after spraying.

To see the full reports for these trials, visit [ahdb.org.uk/sceptreplus](http://ahdb.org.uk/sceptreplus)

## Future trials

Coronavirus may impact the delivery of some of our planned trials this year, but we are working hard to continue trials. In addition to 14 new pest and disease targets, we will be continuing, where needed, with previous trials, to understand new products and generate sufficient data on crop safety and product efficacy, to secure new authorisations.

Get in touch to discuss your needs: [joe.martin@ahdb.org.uk](mailto:joe.martin@ahdb.org.uk)

## New targets for SCEPTREplus

Pests	Diseases
Aphid trials in hardy nursery stock and fruit	Alternatives to thiram and metalaxyl-M
White fly in ornamentals, field vegetables and protected crops	Bacterial disease in field vegetables
Leaf hopper in protected and outdoor herbs	Blackcurrant leaf spot
Flea beetle in brassica and baby leaf	Blackberry downy mildew
Macrolophus in tomato	Apple canker
Spider mite in hardy nursery stock	Cavity spot in carrots
Mussel scale in tree fruit	Phytophthora in soft fruit



# Making the RIGHT CHOICES

AHDB Knowledge Exchange Manager, Dawn Teverson, reports on a busy first year for the Strategic Centres for Field Vegetables.

The four Strategic Centres for Field Vegetables, launched last year, provide an independent evaluation of yield, quality, storage potential and shelf life for brassicas, carrots, onions and vining peas.

The sites also provide growers with practical solutions to a range of key issues identified by industry, demonstrating how research can translate into best practice.

## Onions

The variety trials assessed spring-sown onion varieties for yield, bulb quality, vigour, onion ring data and storage.

Of the brown varieties trialled, Medusa and Numbito were the earliest to mature and yielded well above average. There was a difference of 37 t/ha between the highest and lowest yielding varieties. For reds, Red Light, Red Tide and Ruby Star performed best. Although Medusa gave the heaviest yields, it was not so good when rated for onion rings (single centres), so it is important to match a variety to the target market.

Grower-led demonstrations looked at the effect of plant density on bulb size to increase crop size to fit in with revised supermarket specifications. Unsurprisingly, it was not a simple story of lowering drilling densities to increase bulb sizes. Lower density plots had higher yields of bulbs greater than 60 mm and 70 mm, but the shift in bulb size was not a simple ratio across all sizes, and the responses were different at the two sites.

## Carrots

At the annual Carrot Demonstration event last October, 80 varieties of carrots were available to assess. Breakage causes waste, and new varieties were compared with the industry standard, Nairobi, considered to be particularly good for this characteristic. Interestingly, the eight best varieties did not include Nairobi. Trials this year will follow up to get robust results.

We also evaluated seed size and depth of drilling, which showed that larger seed doesn't automatically mean bigger yields. Drilling down into some moisture was also essential – but not too deep.

## Peas

In 2019, we funded the vining pea variety trial located in a commercial crop in Lincolnshire on a fertile light silt soil type. It included 18 varieties, including standards, and showed vigorous growth and some very high yields, despite some varieties showing stem rotting at harvest.

Information is also available on varietal reaction to downy mildew and powdery mildew. Varieties to look out for are Sienna, Hyperion, Biktop, Amalfi and Maurice.

Thanks to funding from the Strategic Centres, the PGRO Pea and Bean Guide app launched last year with a new feature to monitor bean seed fly distribution. Information on bean seed fly incidence is also in our Pest Bulletin.





## Brassicas

In Cornwall, 114 varieties of cauliflower (autumn, winter and late winter varieties), and five varieties of spring greens, were tested for their suitability for the growing conditions. Results are available from the autumn cauliflower trial, with a high percentage cut out of Grade 1 produce from all varieties.

Thirty-four different varieties of winter cauliflower were harvested from early November to the end of March.

In November, the early varieties were 7-10 days ahead of normal harvesting periods, with a high percentage of Grade 1 produce. Early December maturing varieties were, on average, 10 days later than expected, but still producing good yields. This trend followed into January. With above average temperatures in February and March, the crop was 7-10 days earlier than anticipated, but still producing good yields. A wet autumn resulted in difficult harvesting conditions,

with some disease on the leaf but this has not affected yields of late summer and winter cauliflower.

In Lincolnshire, demonstrations assessed plant protection products from SCEPTREplus. Herbicides were screened for kale, collards and cauliflower, and insecticides applied in either propagation or as foliar sprays. We also evaluated the Brassica Alert system for ringspot disease, to find the best time for fungicide applications. Results will be made available.

## The future

We are introducing a new site for grower-led brassica trials in Scotland. The area has problems with systemic downy mildew and swede midge. We are also hoping to include a new site for salad crops, but our activities may be impacted by the coronavirus.

Contact [dawn.teverson@ahdb.org.uk](mailto:dawn.teverson@ahdb.org.uk) for further information.

## USEFUL RESOURCES

Download the PGRO Pea and Bean Guide app:

[pgro.org/crop-update-no-6-pest-bulletin-bean-seed-fly](http://pgro.org/crop-update-no-6-pest-bulletin-bean-seed-fly)

Sign up to receive the Pest Bulletin alerts:

[ahdb.org.uk/knowledge-library/ahdb-pest-bulletin](http://ahdb.org.uk/knowledge-library/ahdb-pest-bulletin)

Get the latest variety and demonstration trial results:

[ahdb.org.uk/farm-excellence](http://ahdb.org.uk/farm-excellence)



# KEEPING IT CLEAN

**What are the changes to chlorate and perchlorate residue levels and what steps can you take to reduce risk of foodborne illness in your fresh produce production?**

When meeting with growers, our knowledge exchange managers take note of individual requests and suggestions, to make sure that the needs of our industry are being met. A common theme emerged last year around the need for information and practical advice about managing microbials throughout the whole growing process. In response,, the Microbials 'Keep it clean' conference took place at Warwick Crop Centre, earlier this year.

The event looked at the fundamentals of microbials management, which centre around: irrigation, maximum residue levels (MRL) and underpinning the whole process, risk management.

## **Irrigation – reducing chlorate residue in fresh produce**

David Kennedy, Chair of the Red Tractor Technical Advisory Committee for fresh produce, started the event by saying, “Water has to go through such a journey to deliver what we need for a crop.”

David continued, “Some retailer technicians who are responsible for fresh produce safety, are likely to be unaware of the process that open

source water has to go through, to make it fit for irrigation. There are different water treatment methods available, some of which, such as treating with chlorine dioxide, lead to chlorate traces in fresh produce. Water treatment is vital to ensuring that fresh produce remains safe to eat.”

Al Sayed from International Water Solutions, presented on irrigation water treatment using chlorine dioxide. Al's presentation focused on water filtration, treatment and irrigation pipework flushing. Good quality water is essential as the issues from contaminated water can be:

- Build-up of biofilm in pipework, leading to increased bacterial loads
- Blocked filters
- Loss of man hours
- Potential loss of crop

One of the current practices that provides misleading data, is when people test water at the source, rather than the point at which it meets the crop. If water has been affected by any microbiological issues, you are more likely to effectively identify it by monitoring it at the point at which it is used on the crop.

In addition to chlorine dioxide treatment, current methods that are being used for irrigation water treatment, include:

### **Chlorine**

Designed as a poison but used as a disinfectant, although its effects are short-lived.

### **Hydrogen peroxide**

A lot is needed to be effective; it can be corrosive and is not particularly good for the environment.

### **UV systems**

Kills on contact and is preferred for the environment as it doesn't leave a residue, but its placement in the irrigation cycle determines its effectiveness.



## MAXIMUM RESIDUE LEVELS – CHLORATE MRLS

Maria Gil Munoz of CEBAS, Spain spoke on how to mitigate against chlorate residues in fresh produce, and her colleague, Ana Allende, gave an update on chlorate MRLs which have now been voted and agreed on.

In summary, leafy salads, herbs and edible flowers now have an MRL or 0.07 mg/kg. The Kale MRL is the only one that has changed and is now at 0.2 mg/kg.

The MRLs will now be written into law. For further detailed information on MRLs, visit the European Commission website at: [ec.europa.eu/food/plant/pesticides/max\\_residue\\_levels\\_en](http://ec.europa.eu/food/plant/pesticides/max_residue_levels_en)

## RISK ASSESSMENTS

What is the difference between a risk and a hazard? A hazard is something that has the potential to harm you. The risk is the likelihood of the hazard causing harm.

Several field hazards are known. Contamination happens in the field before it even reaches the food preparation area.

It can happen through:

- Water
- Soil and manure
- Livestock/wildlife
- Worker hygiene
- Poorly maintained/cleaned equipment

Plants have a microbiological community living with them around roots and on plant foliage. The objective is not to completely sanitise everything, as there are a lot of unknowns in how the microbiologicals interact. If you cleanse them all, then you leave room for the pathogens such as *E. coli* to flourish. Good agricultural practice is a recognised approach to limit foodborne illness pathogens, because growing is based on assessing risks and eliminating them, or reducing them to an acceptable level. Growers must aim to produce crops that are safe to eat while using an appropriate microbial cleansing process.

“Good agricultural practice is a recognised approach to limit foodborne illness pathogens, because growing is based on assessing risks and eliminating them, or reducing them to an acceptable level”

For more information on how to identify hazards and risks download the event handout from [ahdb.org.uk/knowledge-library/microbials-keeping-fresh-produce-free-of-pathogens](http://ahdb.org.uk/knowledge-library/microbials-keeping-fresh-produce-free-of-pathogens)

Grace Choto, Knowledge Exchange Manager, said, “AHDB worked together with growers, Warwick Crop Centre, chlorine dioxide systems specialists and European scientists, to deliver an event that growers had requested.

“We always aim to deliver the latest information and frame it in the context of your queries and requests. We welcome any suggestions that you may have, so do get in touch if you have a view on what could be included in future microbial events.”

# FEEL IT IN THE AIR

The benefits of an even climate in your glasshouse are well known, but how can you be sure you are achieving it? Jon Swain, GrowSave, explores the importance of testing air movement.

Significant differences in temperature may develop in glasshouses due to highly localised factors. These may include draughts from open doors, areas of shading and lower sun angles at certain times. These factors can cause noticeable variation in the conditions for plant growth.

The concept of creating homogeneous, or uniform, glasshouse climates is well established. Maintaining the same conditions throughout the glasshouse can lead to consistent crop production, with reduced disease among lower leaves. Then there is the potential energy saving from eliminating cold spots. These areas would otherwise be heated to the target temperature, while the rest of the glasshouse ends up warmer than necessary – perhaps not a problem, but certainly a cost.

## Know your own glasshouse

While an even climate is best for both crop production and the balance sheet, the biggest uncertainty is how to achieve it. Firstly, it is important to understand what is happening in your own glasshouse; don't simply assume that what should happen in theory is replicated in practice! Too often, idiosyncrasies of individual structures and locations can lead to less than perfect conditions. However, it can be hard to identify potential problem areas, especially if the whole growing area is controlled by only a couple of measurement boxes. Sensing at many points can give valuable insight to the finer detail.

Find out what is happening in your current setup. If you know that one corner is always cold, or another section performs below par, don't accept that it must always be that way. By using some simple techniques, such as a smoke machine to help visualise air movement patterns, it may be possible to rectify this type of issue. Smoke testing is a relatively low-cost but effective method of seeing what is going on.

## Getting the right fans

Air movement is the key to overcoming these differences and achieving a homogenous climate. Without it, warm, humid air can easily build up around a transpiring crop. It is, therefore, important to create some sort of airflow, typically using fans. By mechanically pushing and pulling air around the structure, temperature and humidity can be evened out.

“High-level horizontal fans could move a lot of air... but there was very little effective movement at ground level where the crop was”

However, it is not as simple as just installing a few fans and switching them on. Excessive air movement may have unwanted adverse effects, so care must be taken about the sizing and positioning of fans. Too few larger fans will have limited effect; many smaller fans will add to the installation cost.

GrowSave trials at an ornamentals nursery demonstrated that high-level horizontal fans could move a lot of air – indeed, you could feel it. But there was very little effective movement at ground level where the crop was.

To assess the effect of different fans, we measured airspeeds in an empty 4-metre high glasshouse. It was equipped with a standard type setup consisting of a matrix of fans mounted at 3 metres high and aimed horizontally along the bays. The tests were conducted with a set of sensitive anemometers (airspeed sensors) capable of detecting airspeeds in the range 0–20 metres per second. These were oriented to sense air motion in three directions: left to right, lengthways, and vertically.

To establish baselines, measurements were first taken with the fans switched off, and all glasshouse doors and roof vents closed. As expected, virtually no movement was observed in any position.

The fans were then switched on and airflow was allowed to stabilise before the measurements were taken. The anemometers were positioned at various heights above the ground at each location, at 0, 1, 2 and 3 metres.

Initial analysis suggests that air movement generated primarily at fan height reduces in speed and has relatively little spread away from the fan axis. Furthermore, airspeeds fall away with distance from the fans. This is entirely expected, but the result is that at ground level, where many ornamentals crops are grown, minimal air movement was observed.

This work will continue over the coming months, with detailed analysis and results, taking into account other styles of fans, such as vertical axis destratification types. To find out more about air movement in a glasshouse, visit: [ahdb.org.uk/growsave](http://ahdb.org.uk/growsave)



## How to get an even climate in your glasshouse

- Don't assume – find out what's actually happening in your setup
- Use techniques such as smoke machines to visualise air movement
- Consider using multiple sensors, not just a couple of measurement boxes

# GETTING TO GRIPS WITH alternative growing media

Following the end of a joint funded, five-year project to help the transition to responsibly sourced-growing media, Wayne Brough, AHDB Knowledge Exchange Manager, considers how ready the UK horticulture industry is to go peat-free.



The issue of peat use in horticulture has once again become a hot topic. Ireland has temporarily halted peat harvesting, and the Committee on Climate Change recently published the report 'Land use: policies for a net zero UK', which called for peat extraction to cease in the UK by 2023. The Climate Change Act 2008 committed us to being net zero by 2050 and all use of peat in the UK, whether extracted here or imported, will be counted towards that target. Defra will also be inviting consultation on its 'England Peat Strategy' later this year.

As an industry, we are 30% more efficient in peat use than we were 20 years ago.

The drivers for this reduction have been a result of government policy, but also from new marketing opportunities – customers such as the National Trust demanding peat-free media in their plant products, as well as recognition of the agronomical benefits to alternative growing media blends. And, while this is a significant reduction in use, it doesn't mean we can stop there.

In response to the government's target to remove peat use from commercial horticulture by 2030, AHDB and Defra set up a 5-year project in 2015 to help the industry meet that target.

## Predicting performance

In addition to cost, one of the key blockers for many growers to adopting peat-free blends has been having the confidence that they will perform with different crops and production systems.

Testing countless blends on hundreds of different horticulture crops would have been unproductive, so the project set out to create a model that could predict the behaviour of new mixes, while minimising the need to use plants as performance indicators.



The model analyses the key physical properties of raw materials including air-filled porosity, dry bulk density and available water. It offers a single framework that can systematically compare different blends, meaning manufacturers can design and test new blends more quickly and cheaply. ADAS has now made this model commercially available to growing media manufacturers.

### Cultural shifts

The project tested 213 blends, of which 137 were peat-free, on a range of edible and ornamental nurseries.

The four raw ingredients evaluated were those most widely available - green compost, bark, wood chip and coir.

The trials highlighted the importance of adjusting both the nutrient and irrigation regimes to suit different growing media. Depending on their physical and chemical properties, different media may need extra nutrient inputs and vary in their ability to hold or release water to crops.

Dennis Wilson, Delphy, recommends growers invest in tensiometers to measure how easily the growing media can release water to the roots of crops. The pore sizes (space between the particles) of different media will significantly influence the available water to crops.

At New Produce Farm, where trials were undertaken on 'Malling Centenary' strawberry crops, irrigation had to be tailored to each growing media mix – with some blends requiring drippers to be removed and others needing additional drippers.

## Barriers

Many of the growers involved in the trials found they could go peat-free. Double-H Nurseries, who trialled blends on pot mums, found no change in the timing or quality of their crop in all but one of their mixes, and many of the mixes permitted easier sticking of cuttings.

However, some areas of horticultural production proved more challenging.

Trials in blocking peat in lettuce crops showed that peat could be substituted by around 30%, but any more than this meant the media blocks struggled to go through the transplanting machines. New technology may be required if no suitable peat-free alternatives with the same 'stickiness' can be found.

Alternative mushroom casing trials were also unsuccessful.

## A peat-free future?

The demand for growing media to sustain crop production is increasing, and predicted to increase four-fold by 2050, according to figures shown at the International Peat Society Symposium.

Any alternatives to peat must be considered objectively for their own environmental impact. Chasing net zero carbon emissions by eliminating peat use can't result in higher carbon outputs from increased haulage requirements to import alternatives.

Manufacturers are also competing with other industries to access alternative raw materials. Woodchip, for example, has doubled in price and is difficult to source, now it is being burnt for energy.

The Growing Media Association are finalising a consumer-facing, auditable, responsible sourcing scheme

It will enable all raw materials to be measured in the same way, comparing for instance how much energy or water they use during production, and enable customers to select the most responsibly sourced products.

The ultimate question many growers will ask though, is how much the customer is willing to pay for the alternatives.

For more details about the project and trials, visit [ahdb.org.uk](http://ahdb.org.uk)

## 10 TOP TIPS FOR GOING PEAT-FREE

1. Define what you need from your growing media. Consider your crops, container sizes and duration of crop production, etc.
2. Speak to your growing media manufacturer to find out what raw materials and blends are available to meet your needs.
3. Start small-scale trials first, with different blends and a range of crops.
4. Grow the scale of your trials and repeat them over different seasons.
5. Measure plant performance objectively and compare to peat-based media.
6. Adapt your cultural inputs; consider nutrients, irrigation and machine settings, for example.
7. Understand your costs. Indirect costs or benefits could be additional fertiliser, changes to production times or reduced wastage.
8. Agree future product specifications with your growing media manufacturer.
9. Check your customers are happy with your new blends and final product.
10. Analyse and assess your growing media and nutrient content regularly during commercial crop production.

### AIR-FILLED POROSITY (AFP)

The proportion of the volume of a medium that contains air after it has been saturated with water and allowed to drain by gravity.

### DRY BULK DENSITY

The dry mass per unit volume of a moist medium.

### AVAILABLE WATER (AW)

The water held in the medium between pot capacity and permanent wilting.

**Project:** Transition to responsibly sourced growing media use within UK horticulture

**Lead contractor:**  
Barry Mulholland, ADAS

**AHDB contacts:**  
Wayne Brough and Georgina Key



# ARTIFICIAL INTELLIGENCE and the need for better data

**Data. It's one of the most used words in horticulture, and it's clear how much value we place on collecting it. But are we making the most of the huge volumes of information that we record? Grace Emeny reports.**

With continuing advances in environmental control and monitoring systems, we are collecting more data than ever before. However, the extent to which that data is used varies significantly. We have been working with the Innovate UK backed Digital Catapult to understand the potential of using data more effectively in our protected cropping industry. This will help to develop the scope for use of artificial intelligence (AI) in glasshouses.

The team started by interviewing growers, crop consultants, agro-robotic academics, technology providers and agri-tech start-ups to understanding the current levels of data collection. They also examined the applications of AI in use in the UK protected cropping industry.

The key thing that they were looking for was evidence of outcome data. This refers to data collection and analysis that, in turn, resulted in an actionable outcome. For example, whether data collected on environmental conditions

could be linked to disease outbreaks and therefore trigger crop protection activity. Analysis of this was done by reviewing multiple large datasets that were kindly provided by growers as part of this study.

What became apparent early on was that the level of outcome data available was fragmented and currently not suitable for analysis and the application of AI. For instance, the data currently available to analyse disease and pest outbreaks lacked quantity, consistency and variety.

While this might not seem like the desired outcome, it has in fact been useful. A recommendation was made to industry to develop a consortium, spanning the entire supply chain. This group would collect high-volume, high-quality data that could enable advanced analysis for the purposes of crop protection, yield prediction and improved harvesting. Huge advances in developing AI could be possible if large

data sets are anonymised and combined to provide enough detail for machine learning and trend identification.

The Digital Catapult team is currently looking for funding opportunities to further progress this work.

## WHAT CAN I DO TO HELP ADVANCE AI?

Take a detailed look at the data that you collect. Do you know why you collect all of it? What decisions do you make as a result of your data analysis? Do you record crop protection activity alongside your environmental and monitoring data? The more robust the data sets that growers develop, the quicker we can expect to advance AI potential for the industry.

# The future of automated production systems – ARE WE GETTING CLOSER?

**Grace Emeny, AHDB Knowledge Exchange Manager, updates on the progress being made to develop a prototype autonomous guided vehicle for use in different horticultural production systems as part of our SmartHort campaign.**

Through our SmartHort Automation Challenge, researchers and engineers at WMG, University of Warwick, are developing a new autonomous guided vehicle (AGV) that could help transform the horticultural sector and help tackle the labour shortage.

A prototype is being designed to meet the complex needs of commercial horticulture, following the launch of the project in 2019. The project was chosen following a competitive process, in which UK horticultural businesses were invited to pitch for an area of their business to automate.

Experts in automation systems design, WMG, are creating the model alongside the three winning horticultural businesses: Crystal Heart Salad (lettuce propagators, Yorkshire), Valefresco (salads, Worcestershire), and WD Smith & Son (bedding plants, Essex). They anticipate it will have the potential to automate the movement of trays and boxes around the production area in both glasshouse and outdoor environments.

With a lack of available labour, an increasing pressure for many businesses, the aim is to transform on-site labour-intensive manual logistics into autonomous processes. This will enable human resources to focus on tasks that add value to the product and business, rather than spending time on non-value-added tasks, such as plants around the glasshouse.

In general, there are two main barriers that prevent the uptake of automation. Many off-the-shelf solutions don't work for diverse horticulture production systems, and the return on investment doesn't always stack up in the current trading climate. WMG was tasked with addressing both of these challenges in the project.

Before a design for the new prototype was developed, it was important that the team had a good understanding of both the current marketplace and the technologies in development, to see if there were any off-the-shelf options that could be modified for use in horticulture.

In terms of economic projection, the size of the AGV's market is valued at about \$2.49 billion, with an expansion horizon of 15.8% during the 2019–2025 period. It's clear that there are lots of companies working in this area, though many are still in the prototype phase. It was evident that significant modification would be required to any existing AGV product for use in horticulture. The team concluded that there was a distinct lack of modular systems to allow flexibility of use between different sites, which is required for the SmartHort Automation Challenge.

We visited the three selected businesses to conduct an in-depth technical feasibility study, to look at deploying AGVs to transport plants between locations at various stages in their growth and dispatch. The typical task

involved collecting and delivering trays of plants to and from different areas, to support their growth in both indoor glasshouses and outdoor areas.

It soon became apparent that the surfaces over which the robots would be required to travel were not perfectly flat, and were either rough concrete or compacted earth with a plastic covering. An investment would, therefore, be needed by each company to improve the roads and surfaces on which the AGVs would run. Each business had different extents to which modification to the existing layout were needed, and this was factored into the feasibility study.

After full analysis of the production cycles at each site, the team felt confident that it would be technically feasible to deploy AGVs, though the payback period allowing for all modifications could be significantly different at each site.

The next stage of the project is to refine possible designs of AGVs that could be used, and ultimately design and develop a physical prototype for testing.

Keep up to date with the SmartHort Automation Challenge at [ahdb.org.uk/smarthort](https://ahdb.org.uk/smarthort) and look out for an event later in 2020, to find out more on the team's progress.



## Barriers to adopting AGVs and automation

### Cost/benefit analysis

Consider the length of payback to invest in AGVs. Sharing technologies between a group of local growers to use at different times could reduce the payback time

### Flexibility

Does the robot have the ability to work outdoors and indoors, on different terrains and in potentially challenging weather conditions?

### Logistics

Where will charging locations be stationed, and how many AGVs are required to account for recharging time?

### Production systems

Can a modular system work for different production systems, crops and trolley systems?

### Inefficient existing practices

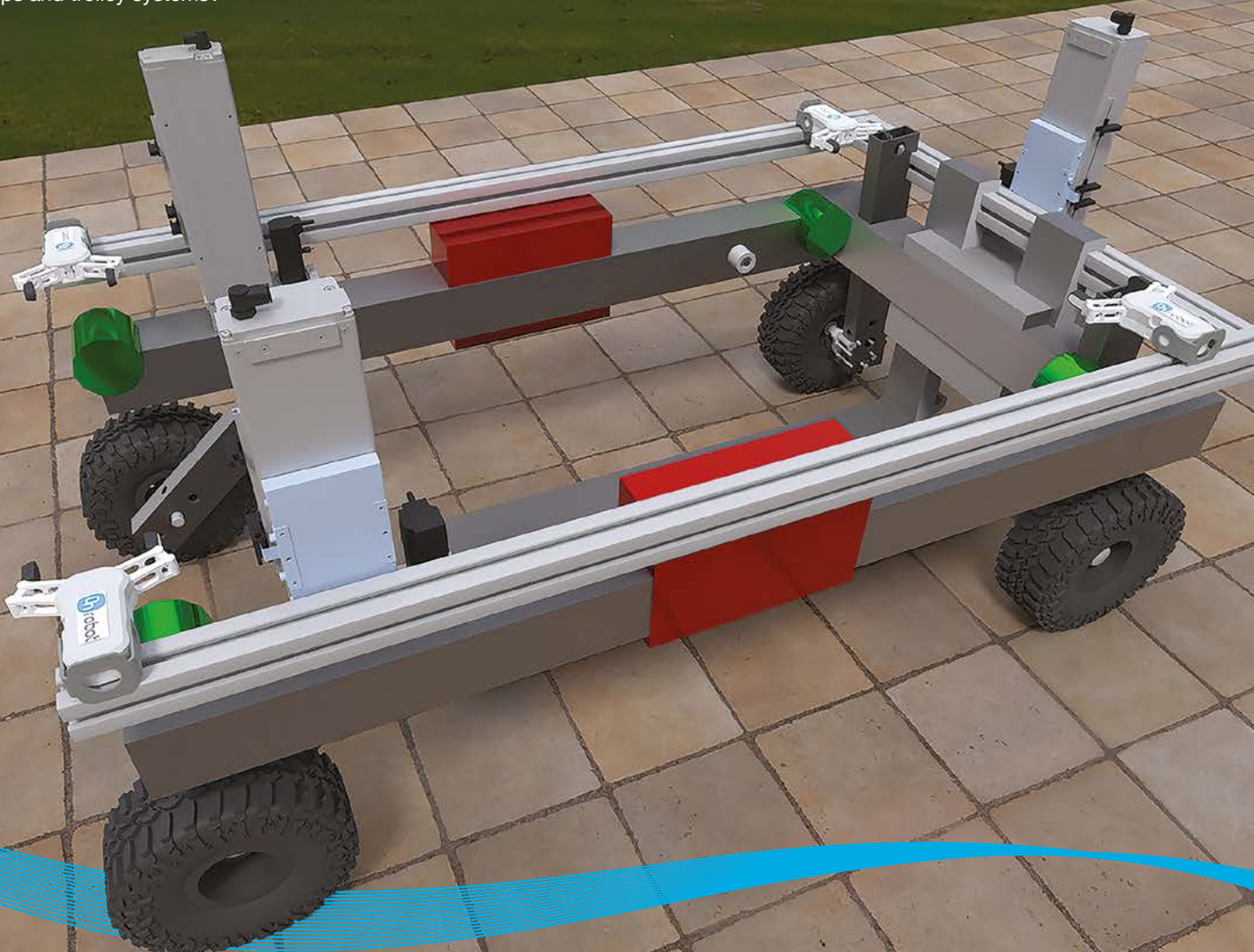
To make automation work, the existing production processes need to be as lean as possible

### Existing products

Check there isn't anything available off the shelf before investing in bespoke equipment

### Health and safety requirements

Ensure robots can sense their environments, to prevent injury to humans



# Five top tips to help recruit **BRITISH WORKERS THIS SEASON**

With coronavirus compounding the already challenging scenario growers were facing to secure enough seasonal labour this year, we have compiled our five top tips to help you recruit workers for this unprecedented season.



**With travel from overseas all but impossible, for the first season in a very long time we are faced with the reality of employing a majority of British workers and pickers with next to no horticultural experience. How can you ensure that you have enough workers? And how can you ensure they are prepared for a season of crop work?**

We've created our five top tips for recruiting in this extraordinary situation.

## **1. Finding workers**

For businesses that recruit directly, consider advertising any opportunities for work on local social media groups. Community groups on Facebook are great ways to link up with individuals

who are currently out of work, and would ensure that workers wouldn't be travelling across the country to get to you. If you use recruitment agencies, think about posting links to their websites in the same groups. Finding local workers would also reduce the reliance on accommodation required.

## **2. Educating your new workforce**

Assuming that a number of your new workforce in 2020 are from a hospitality and catering background and might have limited knowledge of horticulture, tell them more about your business. A simple idea would be to use your phone to film a quick video giving an introduction to your business. Include

information on the crops that you grow, the sort of jobs that will be available and the likely time duration of roles. Make sure that the video highlights the benefits to people of coming to work for you. If you're offering accommodation, make this clear too. This is relevant for all businesses, regardless of whether you recruit directly or through an agency. You could share these videos on social media.

## **3. Prepare your induction process**

We all know that first impressions count, and this is particularly important when we're thinking about induction. Before anything else, when they arrive, make sure that you stress to new workers 'what is in it for them.'

## USEFUL VIDEOS

- **Becoming a champion soft fruit picker** [ahdb.org.uk/knowledge-library/champion-picker](https://ahdb.org.uk/knowledge-library/champion-picker)
- **Health & Safety Awareness for Horticultural Businesses** [bit.ly/AHDBHealthandSafety](https://bit.ly/AHDBHealthandSafety)
- **Health & Safety in Protected Edibles Production** [bit.ly/PEHealthSafety](https://bit.ly/PEHealthSafety)

This will help to motivate people from day one and, ultimately, help you to make the most of their skills and increase productivity.

Ensure that you have all paperwork and necessary forms prepared in advance and be ready for their arrival on site. Make sure that everyone has been provided with detailed instructions to find you, don't only rely on a postcode! Prepare detailed maps of the site, including toilets, rest areas and canteens. Prepare them for the working conditions by advising of necessary footwear and suitable clothing options. Even if it seems obvious to you, proving new starters with too much information is better than not enough.

### 4. Develop training aids

Think about your normal training resources. Do you have standard operating procedures for all of the main tasks performed in your business? How do you communicate the correct way to do a job? A quick and simple way to train new starters is to film someone doing the job correctly and make this a training resource for new starters. You can do it quickly on your smartphone. It's a good idea to make people watch this before they start doing a job – this way, it stops them picking up any bad habits from the start. For growers of soft fruit crops, you can make use of our 'Becoming a champion soft fruit picker' video. This shows how to pick strawberries, raspberries, blackberries and blueberries.

### 5. Health and safety

The importance of health and safety can never be underestimated, and especially not this season. There's a strong chance that many of your new employees will never have spent time in a horticultural business before, and, as such, won't be aware of the various risks and hazards on site. Our health and safety video is available to watch on the AHDB Horticulture YouTube, and covers all of the key areas. This can be used by any business as part of their induction process. For growers of glasshouse crops, we have a specific health and safety video to watch too.

AHDB will be continually adding new resources to help horticultural businesses during this challenging time. To access them, visit [ahdb.org.uk/coronavirus](https://ahdb.org.uk/coronavirus)

# FIRST IMPRESSIONS COUNT

This unprecedented season has left some horticultural businesses recruiting workers with no industry experience. As part of our SmartHort campaign, we look at how getting your induction process right is critical to success.

With fewer experienced seasonal workers coming from the European Union over the last few years, many UK businesses have had growing concerns about staff retention and labour productivity. This issue has been compounded this season by Covid-19. For those lucky enough to find staff locally, one of the big questions is how new recruits will fare in horticulture. With limited experience, what will be the impact on productivity, and how long will they stick with it?

Our SmartHort programme has identified that one of the most important things you can do to boost staff retention and productivity is to have a good induction process. First impressions really do count, and, if you get it right, there is every chance your new starters will flourish.

It is worth remembering that it is highly likely that some of your new employees may have lost a job and will be looking for financial security. Their confidence may be low, but don't underestimate the alternative skills they offer, which could be beneficial.

## All in the preparation

Think about the impression your business will make on your new staff even before they arrive. They should feel part of the team before stepping onto site.

Provide them with as much information as possible before their start date and make sure that they are clear about what is expected from them from the outset.

Information that may seem obvious to you, might not be to them – too much information is better than not enough.

Prepare them for the working conditions by advising in advance the necessary footwear and suitable clothing options. Providing clear directions to your business (not just a postcode), as well as maps of the site, including toilets, rest areas and canteens, can help people feel less lost, literally and figuratively!

Ensure you have prepared all the paperwork and necessary forms ready for their first day. Use our checklist available on our website to make sure you haven't missed anything.



## Training

Review your normal training resources. One of the most useful tools you can use are standard operating procedures for your main tasks. These can be written documents, but visual boards with pictures or videos to demonstrate good practice might be more impactful. A quick win is to film someone doing a task correctly and make this short video part of the training resources. It should stop people picking up any bad habits from the outset.

Finding time to allow people to learn and getting people into good habits from the start will pay for itself tenfold, when they are out in the field working productively.

## Health and safety

In addition to the normal health and safety induction and training, the current restrictions mean it is obviously also important to think about social distancing from the moment your workers arrive. They need to feel their wellbeing and personal safety are being considered from the start.

For instance, could you stagger start times to reduce large groups congregating at the same time? Do you need to modify workspaces and processes to ensure two metres is being kept between workers?

The importance of 'normal' health and safety lessons can never be underestimated. Many of your new employees will not have spent time in a horticultural business before. As such,

they won't be aware of the various risks and hazards on site, such as the movement of heavy machinery and farming vehicles, or working at height.

If you work in edible horticulture, the importance of food safety is, of course, also essential in all induction plans. You might consider sending new starters links to online videos and tools to watch before they start. This would count as a training day, but it would mean everyone should have the same level of knowledge when arriving on site. You could consider pulling together a multiple-choice quiz to test their knowledge and understanding when they start.

For more information about our SmartHort programme, visit [ahdb.org.uk/smarthort](http://ahdb.org.uk/smarthort)

“ Information that may seem obvious to you might not be to them – too much information is better than not enough ”

## USEFUL RESOURCES

You can find the following tools and videos at [ahdb.org.uk/preparing-your-induction-process](http://ahdb.org.uk/preparing-your-induction-process)

### Induction

- Induction checklist template

### Health and safety training videos

- Health and safety in horticulture
- Health and safety for protected edibles
- Safety on soft fruit farms

### Training videos

- Becoming a champion soft fruit picker
- Best practice for outdoor flower harvesting
- Harvesting quality apples and pears

### Food safety tools and videos

- Microbials: Keep it clean – video
- Watercress best practice guide
- Fresh produce tool – manage the risk of microbiological contamination

# INSIDER INSIGHT

## Recruiting **OUTSIDE THE BOX**

**Coronavirus has had a significant impact on the availability of seasonal labour for horticulture. We spoke to G's Marketing Director, Anthony Gardiner, about its marketing campaign to recruit British workers into their business to help plug the gaps.**

G's is one of the largest international producers of fresh produce; growing, packing and marketing crops including salad, celery and alliums at multiple sites around the UK. Like most horticultural businesses in the UK, they rely on large numbers of seasonal workers, predominately from Central Europe, to help with all aspects of production.

In March, in response to the growing threat from the coronavirus, the UK government introduced travel restrictions, leaving G's needing to fill 2,500 positions from Britain.

"We worked on a number of options, including flying in workers directly from Europe. However, people were obviously cautious about taking that risk. There was the added challenge of getting people to the airports, as most countries in Central Europe are under considerable travel restrictions as well. It soon became clear we would have to look at the option of recruiting from within the UK," said Anthony.

As a result, the organisation tasked the marketing and human resources teams to create a new campaign to recruit workers from inside the UK, no mean feat from a pool of people unfamiliar with horticultural production. The result was their 'Feed our Nation' campaign.

"We turned around a national recruitment campaign in just four days, something that would normally take about four months to plan and execute. We were fortunate to secure coverage from the BBC, which led to multiple national newspapers contacting us to hear our story," he said.

"While many of the jobs we advertise are field-based, we have a range of roles from packhouse, drivers to engineers. We can offer a whole range of opportunities for different skill sets and experiences, so it was important to make that clear," he added.

Their UK harvest starts from late April, with peak harvest running from Mid-May until October, so time was of the essence to get people through the door and trained quickly.

"Within four days we'd had over 600 applications, a phenomenal response. We targeted students who weren't able to go back to University until September and those who had been made redundant from the hospitality sector. Businesses from the food supply industry were also important as many had been hit hard by this virus. The market for convenience food, like ready-made sandwiches, went overnight, so those workers were ideal for us to speak to. They already have the food hygiene skills we need and are used to working energetically.

"The floral market was another industry for us to connect with, as they have been particularly badly affected by the closure of garden centres. And so we felt there were plenty of people in the UK who have the right background; our marketing had to make sure we could attract them in," said Anthony.

Once you've recruited UK workers, how do you quickly train them without the relevant experience to ensure productivity doesn't drop significantly? And crucially, how do you make sure they stay with you for the long haul?

Anthony commented, "We had a small number of experienced Eastern European workers already here, and they are vital to help settle in new recruits, both in terms of training and, most importantly, keeping people safe.

"One of the key challenges we are going to face is how to keep these workers engaged and motivated to drive productivity. In a 'normal' season, we would have a mix of new seasonal agricultural workers with returnees, as we know their productivity is three times higher than new workers. We're not sure how the psychology of those who have found themselves working in agriculture through extraordinary circumstance will impact productivity yet."

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# Feed our Nation

So how are G's planning on motivating and inducting staff this year? What will need to change?

"Retention is a big focus for us. We don't want to lose workers quickly and have to re-recruit. We have ex-military staff to help with motivational psychology and we'll be looking at creating new induction materials for anyone who is new to agriculture so that we can get them up to speed as quickly as possible."

Anthony is keen for there to be an industry-wide collaborative approach to this recruitment drive, if the sector is going to cope with the lack of seasonal workers.

"This campaign needs a coordinated, national approach. It needs to be easy for anyone who wants to work to be placed in the industry, so there needs to be a central place where they can find local gaps in employment that would suit them."

For further advice on dealing with the coronavirus, visit our website: [ahdb.org.uk/coronavirus](http://ahdb.org.uk/coronavirus)



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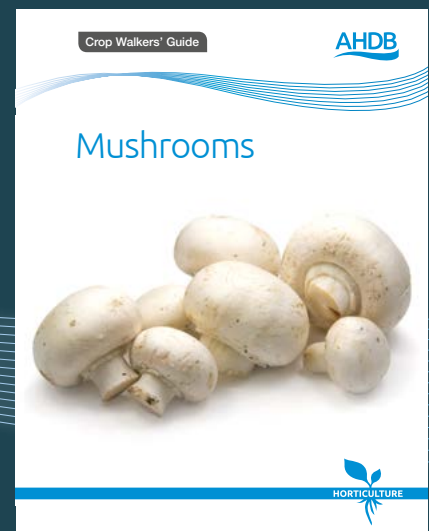
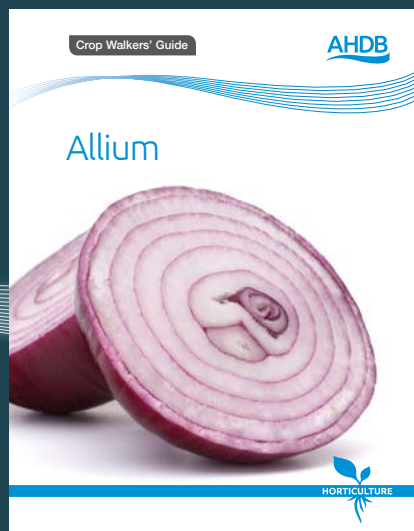


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